

MONTHLY WEATHER REVIEW,

OCTOBER, 1873.

WAR DEPARTMENT,
Office of the Chief Signal Officer,
DIVISION OF
TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE
STORMS.

During this month fourteen well-defined areas of low barometer have been indicated on the Tri-Daily Weather Maps of the Signal Service, some of which have, however, passed over the extreme limits of the territory covered by our stations. Besides these, there have been several indefinite barometric depressions, accompanied by rain and cloud. In detail the storms have been as follows:

No. I. October 3, 4, 5, 6, 7 and 8.—This was a severe cyclone that was first recognized as existing some distance southwest of Cuba; it passed over Florida on the 6th, and continued its course northeastward parallel to the Atlantic sea-board. Numerous disasters were caused by it at sea, and the settlement of Punta Rassa, Florida, was entirely destroyed, a hurricane velocity of ninety miles having been recorded at that place. It struck Lake City very suddenly October 6th at 6.10 p. m. Reports of damages have been received from Jacksonville, St. Augustine and Charleston. The wind was not severely felt at Savannah. Destructive gales were also felt off Cape Henry. A severe norther was induced by the extensive area of low pressure, and was felt along the entire coast of Texas and Louisiana as far as Mobile. This cyclone appears to have passed over the Shetland Islands on the 10th and 11th.

No. II. October 3, 4 and 5.—Produced a very general rain in the Lake region.

No. II.* October 4 and 5.—This kept to the north of the Lake region, and on the 5th apparently united with No. II as the latter passed down the St. Lawrence valley. The barometer fell with unusual rapidity at Eastport, where the wind velocity rose to thirty-two miles on the 5th.

No. III. October 6 and 7.—This may be regarded as a disturbance subsidiary to Nos. I, II and III. It arose in the Middle Atlantic States, and as it slowly moved northeastward was accompanied by heavy rains on the Atlantic coast. Violent lightning was reported at New Haven on the 6th, and a heavy blow, with rain, at Cape May.

No. IV. October 6 and 7.—This storm-centre kept so far to the northward that it only produced strong southwest winds and cloudy weather on Lake Superior.

No. V. October 5, 6, 7, 8, 9, 10, 11 and 12.—The rains and barometric depression prevailing over the California coast on the 4th, 5th and 6th of the month reappeared on the 7th as an incipient storm-centre in Utah, which, after extending northeastward over Dakota and Manitoba, turned to the east and southeast into Minnesota and the Upper

Lake region; it then disappeared in Canada but reappeared after inducing a small centre of disturbance, No. V.^{*}, on the Lower Lakes, which latter moved eastward over New England, joining No. V. in Nova Scotia. Violent thunder storms were reported at Indianapolis and La Crosse.

No. VI. October 12.—This was but a slight barometric depression moving northeastward across Minnesota. High winds prevailed at Yankton.

No. VII. October 14 and 15.—This disturbance appears first in Kansas, although there is reason to suspect its existence two days earlier in northern Arizona. In its passage toward Lake Superior it seems to have lost most of its intensity, a change due possibly to the presence of the more extensive disturbance. No. VIII, far to the north and northeastward.

No. VIII. October 16 and 17.—This barometric depression became first recognizable as such in the valley of the Saginaw, having probably pursued its previous course far to the northward. On the 16th, it moved rapidly southeastward over Nova Scotia, and then turned to the east. Brisk winds prevailed over Massachusetts and the Bay of Fundy.

No. IX. October 16, 17 and 18.—This storm originated as a general rain on the morning of the 16th, extending from northern Texas to Nebraska, and was probably produced by the cooling of the mass of air that was then being forced from the Gulf of Mexico and the Mississippi valley northwestward up the slopes of the western plains. The consequent area of low pressure gradually closed in on all sides, losing its very extended elliptical form until on the afternoon of the 17th, its centre appeared as a small oval in Minnesota, attended by high winds and an extended area of rain. A severe gale was reported at Breckenridge on the 17th, and high winds at St. Paul. The storm-centre moved northeastward, and the gale of the night of the 17th and 18th on Lakes Superior and Michigan was, according to the reports from Milwaukee, one of the severest on record, while Alpena reports a gale of forty-four miles per hour from the south. The barometer at Marquette fell to 28.59 inches. Brisk southwest winds and rain prevailed on the Lower Lakes on the 18th and 19th.

No. X. October 18, 19, 20, 21 and 22.—This began as a slight depression in the Western Gulf States and moving eastward was followed by a severe norther on the Texas coast, while itself increasing in intensity; on reaching the Atlantic coast the depression turned its course to the northeast and developed into a severe storm in the Middle Atlantic States on the 19th and 20. It then turned to the northwest and held on this extraordinary course until the 21st at midnight, when it had reached the Strait of Mackinaw, being recorded as the severest storm since 1859 on Lakes Huron, Erie and Ontario, and continuing for forty-eight hours at most places. Its severity is especially commented upon in reports from Cleveland, Oswego and Buffalo, while the winds on the 20th at Portland, Me., and St. John's, New Brunswick, were the severest of the month.

No. XI. October 20.—This depression was attended by a gale in Manitoba, but passed so far to the northward as not to seriously affect the Upper Lakes. Reports from Fort Benton, when they come to hand, will probably throw some light on its previous course,

No. XII. October 25, 26 and 27.—This storm may probably be traced in northern Texas on the 24th, but came within the cognizance of our stations on the 25th when it was apparently central in Indian Territory. At that time snow was falling throughout the Northwest and extreme Northwest, being very heavy, with high winds at Yankton.

The barometric disturbance was of minor importance, until the 26th, while the snow and rain were increasing in amount; on the latter day the storm-centre passed over the Lower Lakes, and heavy lightning was seen to the northwest of Vicksburg in the evening. On the night of the 27th and 28th the storm was central in New Brunswick, while a southeasterly gale prevailed on the coast of Maine. This was reported as the heaviest storm of the season at Eastport, Portland, Me., Wood's Hole and New Haven.

No. XIII. October 27, 28 and 29.—This low barometer was formed over the Upper Lakes, following closely in the wake of No. XII, and in some sense connected with it. The snow and fog that prevailed on the Lakes, united with the high wind, made the night of the 28th and 29th one of the wildest description, and numerous disasters were reported from Milwaukee. A southeast gale of forty-four miles velocity prevailed at Alpena. The disturbance disappeared over New Brunswick.

No. XIV. October 28, 29, 30 and 31.—This storm, after passing slowly eastward, turned southeast to Lake Huron and the Lower Lakes, accompanied by snow and followed by brisk northwest winds. On the afternoon of the 31st a westerly gale prevailed at Buffalo.

TEMPERATURE.

On Map No. 2 will be found a table of the average mean temperature for the different districts for this month.

For the Middle States, the Eastern Gulf States, the Lower Lake region, the lower Mississippi valley, the Ohio valley and the lower Missouri valley, it will be seen that the temperature averages about the same as for many years past.

The average temperature for New England is about the normal value; while for the South Atlantic States, the Western Gulf States, the Upper Lake region, the upper Mississippi valley and Minnesota, the temperature during the past month, especially in the latter sections, is decidedly below the average of previous years.

RAIN-FALL.

Map No. 3, gives approximately the rainfall for the country east of the Rocky Mountains, and the table printed therewith, shows the excess or deficiency for the various geographical sub-divisions.

It will be seen that the region of heaviest rain was over the northern and eastern sections of the country, the quantity diminishing very regularly as we proceed thence south and west. Drouths are reported from Denver, Lake City and Savannah.

RIVERS.

Upon Map No. 3 will be found a table showing the highest and lowest waters at the principal river stations. It will be seen that the rivers have generally ranged lower than during September, and at some stations have been reported as lower than usual at this season of the year.

EARLY FROSTS.

The first frosts of the season were reported at the following stations:

October 1. Lexington, slight; Wytheville, light; Oswego, light. 6. Toledo, heavy; Detroit, heavy; St. Paul, severe; Leavenworth, heavy. 7. St. Louis, heavy; Cincinnati, heavy; Lexington, heavy; Milwaukee, heavy; Detroit, heavy; Vicksburg, light. 8. Charles-

ton, heavy; Vicksburg, light. 13. Wytheville, heavy; 19. Milwaukee; Duluth, heavy. 20. Milwaukee; Lake City, heavy; Vicksburg, heavy. 21. Baltimore, light; Jacksonville, light; La Crosse, heavy; Nashville, heavy. 24. Louisville, heavy. 26. Buffalo, heavy. 29. Baltimore, heavy; Jacksonville, slight; Milwaukee, light; Mobile, light; Knoxville, heavy; Nashville, heavy; Vicksburg, heavy. 30. Mobile, heavy. 31. Mobile, heavy; Nashville, heavy.

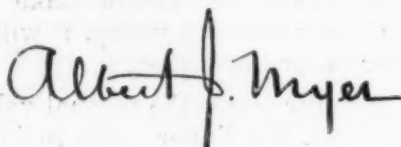
ICE IN RIVERS AND LAKES.

The first ice of the season has been reported in the rivers and bays at the following places: Lexington, October 7th; Toledo, October 6th; Mobile, October, 30th; Yankton, October 27th and 31st; Marquette, October 19th.

EARLY SNOWS.

The first snow falls were reported as follows: Detroit, October 20th and 21st; Chicago, 20th; Denver, 8th, (on the mountains;) on the 16th, (in the city) this ended a drought of forty days; and on the 25th, heavy snow; Dubuque, 22d; Louisville, 28th; Lynchburg, 20th; Nashville, 28th; Rochester, 21st, light snow, and on the 28th heavy snow; St. Paul, 25th, 27th and 29th; Yankton, 24th and 25th; New York, 28th; Duluth, 19th; Leavenworth, 25th; Escanaba, 21st; Davenport, 27th.

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Brig. Gen. (Bvt. Assg'l) Chief Signal Officer, U. S. A.

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Albert J. Meyer

BRIG. GEN. (RET. ARMO'D) CHIEF SIGNAL OFFICER

ENTRIES FOR OCTOBER, 1873.

No. 1.



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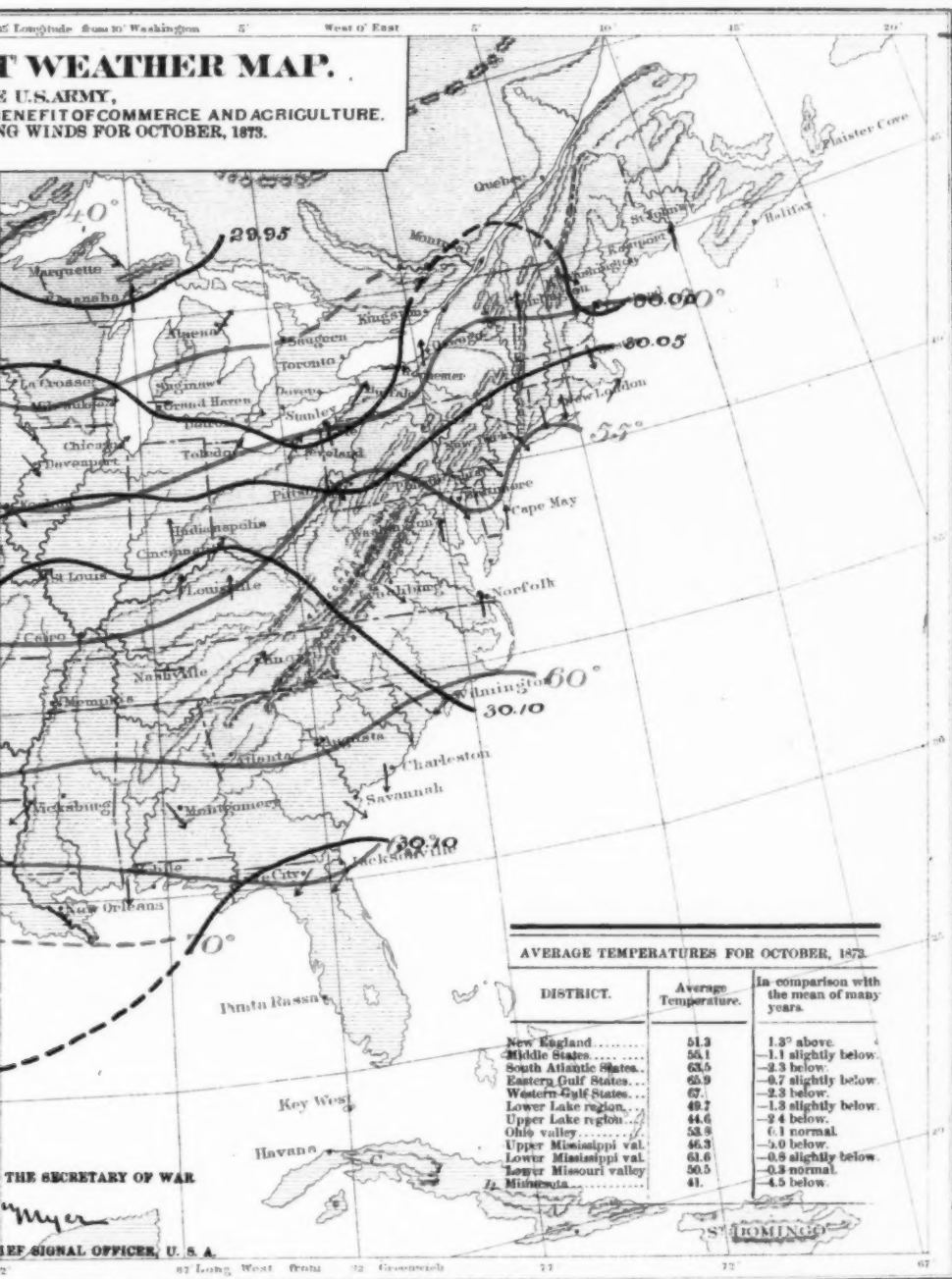
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BRIG. GEN. (BVT. ASSO'T) CHIEF OF

Longitude from 10° Washington 5° West of East 5° 10° 15° 20°

WEATHER MAP. **U.S. ARMY,** **BENEFIT OF COMMERCE AND AGRICULTURE.** **WINDS FOR OCTOBER, 1873.**



AVERAGE TEMPERATURES FOR OCTOBER, 1873.

DISTRICT.	Average Temperature.	In comparison with the mean of many years.
New England	51.3	1.3° above.
Middle States	55.1	-1.1 slightly below.
South Atlantic States ..	63.5	-2.3 below.
Eastern Gulf States	65.9	-0.7 slightly below.
Western Gulf States	67.	-2.3 below.
Lower Lake region	49.7	-1.3 slightly below.
Upper Lake region	44.6	-2.4 below.
Ohio valley	53.8	0.1 normal.
Upper Mississippi val	46.3	-3.0 below.
Lower Mississippi val	61.6	-0.9 slightly below.
Lower Missouri valley	50.5	-0.3 normal.
Minnesota	41.	-4.5 below.

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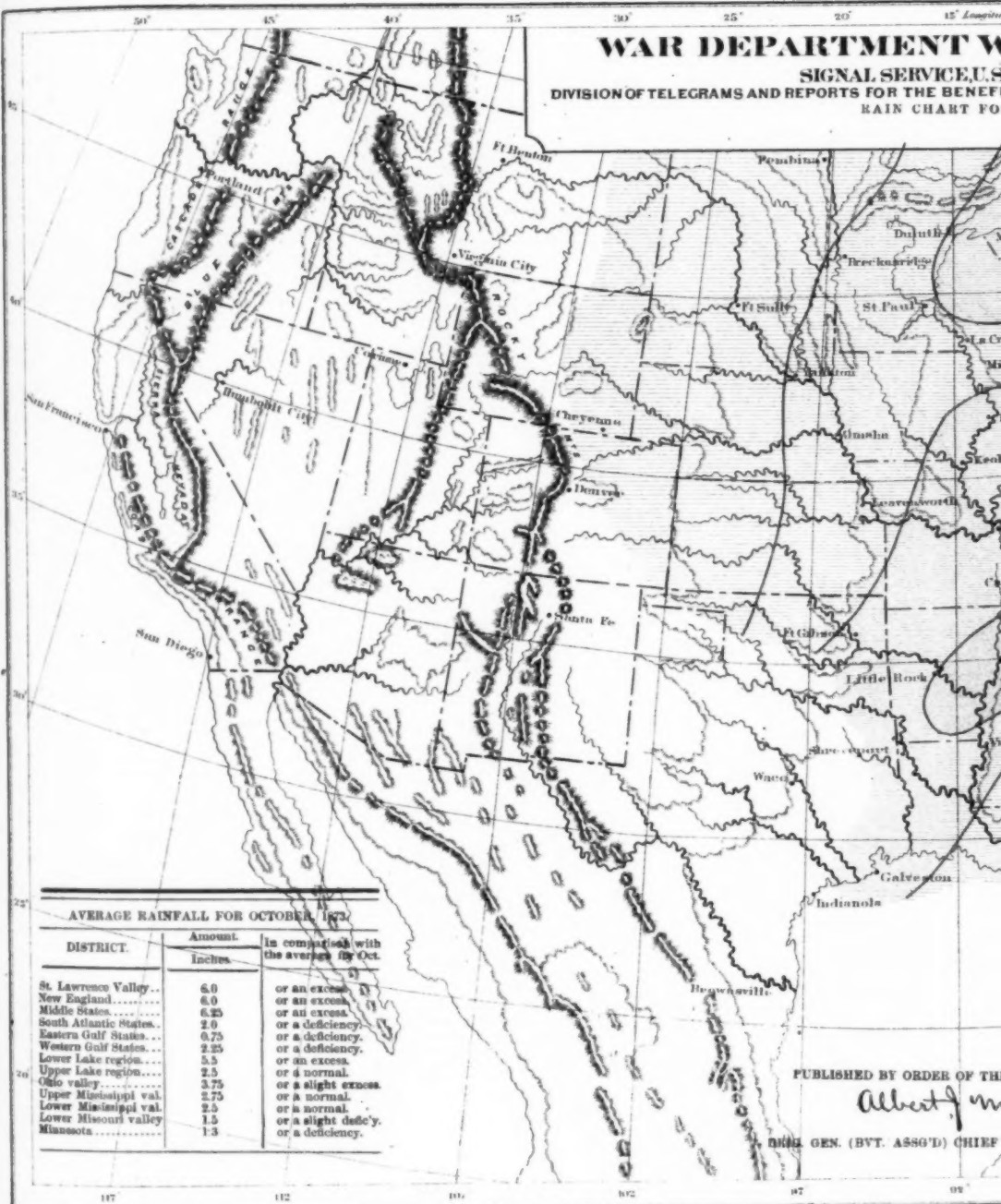
CHIEF SIGNAL OFFICER, U. S. A.

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AVERAGE RAINFALL FOR OCTOBER, 1872

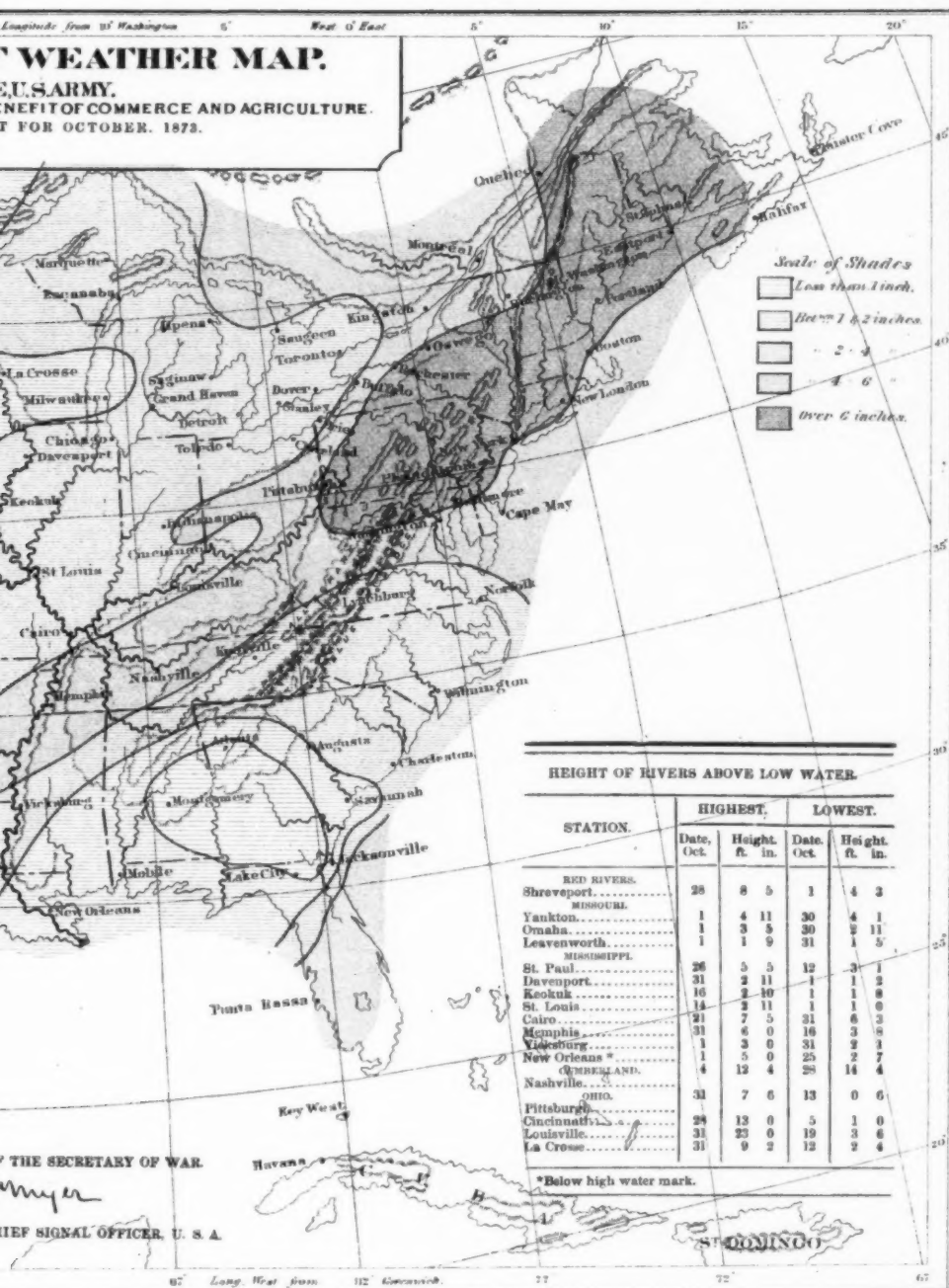
DISTRICT.	Amount.	In comparison with the average for Oct.
	Inches.	
St. Lawrence Valley...	6.0	or an excess
New England.....	6.0	or an excess
Middle States.....	6.25	or an excess
South Atlantic States...	2.6	or a deficiency
Eastern Gulf States...	0.75	or a deficiency
Western Gulf States...	2.25	or a deficiency
Lower Lake region....	5.5	or an excess
Upper Lake region....	2.5	or a normal
Ohio valley.....	3.75	or a slight excess
Upper Mississippi val.	2.75	or a normal
Lower Mississippi val.	2.5	or a normal
Lower Missouri valley	1.5	or a slight defic'y.
Minnesota.....	1.3	or a deficiency.

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CHIEF GEN. (BYT. ASSO'D) CHIEF

Longitude from W. Washington 5° West of East 10° 15° 20°

WEATHER MAP.U. S. ARMY.
IN BENEFIT OF COMMERCE AND AGRICULTURE.
FOR OCTOBER, 1873.

THE SECRETARY OF WAR.

CHIEF SIGNAL OFFICER, U. S. A.